Name …………………………………………………………. Adm. No …………..

 Date …………………………

***231/3***

**Biology**

**Paper 3**

**(Practical)
Time: I 3/4 Hours**

**MOKASA JOINT EXAMINATION**Kenya Certificate **of Secondary Education**

***231/3***

**BIOLOGY**

**Paper 3**

**(Practical)**

**March/April2015**

**1 3/4 Hours**

* Write your name, Admission Number in the spaces provided above
* Write the date of examination in the space provided above
* Answer ALL the questions
* **FOR EXAMINER'S USE ONLY**

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| --- | --- | --- |
| QUESTION | SCORE | CANDIDATES SCORE |
| 1 | 13 |  |
| 2 | 12 |  |
| 3 | 14 |  |
| TOTAL | 40 |  |

1. You are provided with two specimens labeled T and R. Study each of the specimens carefully and use them to give accurate responses to the questions and procedures below.

(a) Take the whole of specimen T. Softly press it downwards on the petri-dish using your first finger, and then remove your finger. Observe and record what happens to the specimen.

(i) Observation (2 marks)

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(ii) Explain the observation recorded in (a) (i) above. (2 marks)

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(b) (i) Specimens T and R perform some functions in the organisms from which they were removed from. State one function which is common to both specimen T and R. (1 mark)

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(ii) Using observable features only on specimen R, describe how it is adapted to the function named in (b) (i) above. (3 marks)

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(c) Explain the main features that adapts specimen T to the function named in (b) (i) above. (4 marks)

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(d) Identify the group of organisms that use specimen R. (1 mark)

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2. The picture below shows series of beaks in birds.



(a) State the type of evolution that may have led to the emergence of the different beaks shown on the pictures above. (1 mark)

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(b) Name the type of evolution structure represented by the beaks shown on the pictures above. (1 mark)

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(c) Observe the pictures carefully. From your observations, what features are responsible for the different types of beaks? (3 marks)

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(d) Suggest the type of food likely eaten by birds whose beaks are shown in pictures A, B, C and D. (4 marks)

A ……………………………………………………………………………………………………………………………

B ……………………………………………………………………………………………………………………………

C ……………………………………………………………………………………………………………………………

D ……………………………………………………………………………………………………………………………

(e) Briefly state how beak shown in picture A is adapted to feeding. (1 mark)

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(f) Below are pictures from two different organisms.



(i) What is the specific function of the two structures shown in the pictures? (1 mark)

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(ii) What type of structures is represented by the two structures shown on the pictures? (1 mark)

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3. You are provided with a specimen labeled K.

(a) (i) With a reason, identify the part of the plant represented by the specimen. (2 marks)

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(ii) Cut the specimen into two halves transversely. Observe the arrangement of seeds inside the specimen. Suggest its placentation. (1 mark)

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(b) (i) Suggest the mode of dispersal for specimen K. (1 mark)

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(ii) Give one reason for your answer in (b) (i) above. (1 mark)

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(c) (i) Specimen K in its raw state has an excretory substance in its skin. Name the excretory substances. (1 mark)

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(ii) How is the excretory substance named in (c) (i) importance to human? (2 mark)

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(d) From the remaining parts of specimen K, cut out thin strips measuring 1cm wide and 5cm long. Place two of the stripes in tap water (solution X) and the other 2 in concentrated salt solution (solution Y). Allow the set ups to stand for 30 minutes.

(i) After the 30 minutes, remove the stripes from the two solutions. Observe and record the shape of the strips from each solution. (2 marks)

Solution X ………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

Solution Y ………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(ii) Using your fingers, feel the texture of the strips from the two solutions. (2 marks)

Texture

Solution X ………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………… …………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

Solution Y ………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………… …………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(e) Explain the observations made in (d) (i) and (ii) for stripes in solution X. (3 marks)

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